



12 OCT, 2025

Sunny days ahead for our energy?



Sunday Star, Malaysia

Sunny days ahead for our energy?

Malaysia's transition to solar power has reached an exciting turning point.



Human writes
MANGAI
BALASEGARAM

ONE thing that defines Malaysia is the sun. We bask in intense sunshine most days, unlike temperate countries that endure many days of grey skies.

So it's a paradox that although Malaysia has some of the highest solar irradiance globally, we barely tap into this natural resource to power the country. Solar energy contributes to less than 2% of power generation in Malaysia.

Instead, over three-quarters of our electricity is generated from fossil fuels, primarily coal, despite a lack of local abundance or long-established use of coal. We imported a vast 20 million tonnes of the stuff in the first half of 2025 and reliance has risen sharply from 7% in 2000.

And it continues to rise. Power

from coal-fired plants rose nearly 17% in the first half of July, data from Malaysia's Grid System Operator showed, according to Reuters. Coal's share of local power generation rose to nearly 60% in the first half of 2025, the data showed.

Those are alarming figures given the clear climate case for phasing out coal – it is the biggest emitter of greenhouse gases that warm the planet. The past 10 years have already been the 10 warmest on record.

Globally, there is now strong momentum towards renewable energy (RE) sources, namely solar and wind. In the first half of 2025, RE overtook coal as the world's leading source of electricity, the energy think tank Ember reported. The UK completely phased out coal-fired plants in 2024.

Although this trend is not even across countries, it is very significant – Ember calls it a "crucial turning point". Solar power has been the largest source of new electricity for the past three years globally, fuelled by a dramatic drop in prices.

Malaysia has played a leading role in this trend, as the third largest manufacturer of solar photovoltaics in the world. This raises the question:

When will we really leverage our own resources to move towards cleaner energy?

In fact, the government is actively driving the solar industry forward, under a roadmap targeting a RE capacity of 70% (and solar capacity of 58%) by 2050. Supporting this transition are programmes for utility-scale projects, schemes promoting rooftop solar power and corporate power purchases, and various tax allowances and financial incentives to spur investment.

"The momentum we're seeing now is the result of years of groundwork.... While some projects have come later than expected, it's encouraging that the ecosystem is finally taking shape in a more coordinated way," says climate change expert Dr Renard Siew.

For example, CRESS (the Corporate Renewable Energy Supply Scheme) provides a pathway for corporations to directly procure RE. "This is crucial for Malaysia's competitiveness as it aligns with global supply chain expectations and helps companies lower their emissions," he says.

The peer-to-peer energy pilot scheme enables solar panel owners with excess energy to trade energy directly with

consumers. This marks "a shift towards more distributed and participatory models of energy generation", says Siew.

But scaling up solar power is not straightforward. Solar panels work only in daylight and this intermittent supply poses a challenge for system stability. Batteries are needed for energy storage to provide a reliable supply.

Many other complex factors must be considered, not least the fact that we already generate far more energy than we need. In 2021, Malaysia's power "reserve margin" – the excess of available power over peak demand – was a whopping 48%, costing the country RM1bil a year.

How did we end up here? Well, power plants are a lucrative business, so this has driven the building of plants. Plus, binding deals with independent power producers require us – you and I, the taxpayers – to pay for a fixed amount of power and "capacity charges", regardless of actual need.

One energy expert calls for caution moving forward with solar power and to ensure that costs (such as for energy storage and access charges to export electricity to the grid) are apportioned fairly, rather than placed on consumers.

Siew concurs: "The way installation, storage, and grid costs are being apportioned isn't always equitable. Much of it still falls on the end consumer. These costs should ideally be treated as shared system-level investments,

supported by clear and transparent cost-recovery mechanisms."

As for Malaysia's high reserve margin, he says: "The focus should now be on flexibility and modernising the grid, improving demand management, and exploring regional power trade opportunities."

"Greening the grid" will give Malaysia a competitive edge to attract investments such as data centres (which are huge energy hogs and create surges in electricity demand everywhere they are set up).

Better planning and sequencing are also key, Siew says, noting that initiatives rolled out in isolation have limited impact. He calls for "a more cohesive national roadmap that links generation, transmission, and consumption strategies, so that solar growth strengthens not strains the system".

We are still stuck on coal, and we're not yet at that turning point towards renewables being seen globally. And yet, 2025 seems significant for energy generation in Malaysia. As Siew says: "Malaysia's solar transition has reached an exciting inflection point."

Mangai Balasegaram writes mostly on health, but also delves into anything on being human. She has worked with international public health bodies and has a Masters in public health. Write to her at lifestyle@thestar.com.my. The views expressed here are entirely the writer's own.

'Greening the grid' will give Malaysia a competitive edge to attract investments such as data centres (which are huge energy hogs and create surges in electricity demand everywhere they are set up).